

WHAT IS CLAIMED IS:

1. A liquid crystal display substrate, comprising:

a first substrate including at least one substantial region;

a dummy region adjacent the at least one substantial region;

5 a plurality of first spacers and a first sealant positioned in the at least one substantial region; and

a plurality of second spacers and a second sealant positioned in the dummy region, wherein each of the plurality of second spacers are spaced apart from one another at a uniform distance, and the second sealant is capable of being
10 positioned in at least one open area created by spacing the second spacers apart from one another.

2. The liquid crystal display substrate as recited in claim 1, wherein the uniform distance is greater than a width of the second sealant.

15 3. The liquid crystal display substrate as recited in claim 1, wherein the uniform distance ranges from about 1.5 mm to about 2.5 mm.

4. The liquid crystal display substrate as recited in claim 1, wherein each of
20 the plurality of second spacers has a uniform size.

5. The liquid crystal display substrate as recited in claim 4, wherein each of the plurality of second spacers includes a cubic shape with a side length in the range of about 50 μm to about 150 μm .

5 6. The liquid crystal display substrate as recited in claim 1, wherein each of the plurality of second spacers includes one of a cubic shape, a cylindrical shape and a prism shape.

7. The liquid crystal display substrate as recited in claim 1, wherein the
10 second sealant is positioned substantially parallel to the first sealant.

8. The liquid crystal display substrate as recited in claim 1, further comprising a second substrate positioned opposite the first substrate.

15 9. The liquid crystal display substrate as recited in claim 8, further comprising a liquid crystal layer between the first substrate and the second substrate.

10. The liquid crystal display substrate as recited in claim 8, wherein the first sealant and the second sealant are positioned between the first substrate and the
20 second substrate to bind the first substrate and the second substrate and create a gap therebetween.

11. The liquid crystal display substrate as recited in claim 8, wherein the first substrate is a color filter substrate and the second substrate is a thin-film transistor substrate.

5 12. The liquid crystal display substrate as recited in claim 1, wherein the first sealant is positioned on a seal line portion of the at least one substantial region.

13. The liquid crystal display substrate as recited in claim 1, further comprising a cutting line positioned between the at least one substantial region and the dummy
10 region, wherein the cutting line defines the at least one substantial region.

14. The liquid crystal display substrate as recited in claim 1, wherein the first sealant and the second sealant include one of an ultraviolet curable sealant and a thermally curable sealant.

15 15. The liquid crystal display substrate as recited in claim 1, wherein the plurality of first spacers and the plurality of second spacers are formed from one of a photoresistive insulating layer and a light-insensitive insulating layer.

20 16. The liquid crystal display substrate as recited in claim 1, wherein the second sealant is capable of being positioned in at least one other open area created by spacing the second spacers apart from one another at the uniform distance,

17. A liquid crystal display substrate, comprising:

a first substrate including at least one substantial region;

a dummy region adjacent the at least one substantial region;

5 a plurality of first spacers and a first sealant positioned in the at least one substantial region;

a plurality of second spacers and a second sealant positioned in the dummy region, wherein each of the plurality of second spacers are spaced apart from one another at a uniform distance, and the second sealant is capable of being positioned in at least one open area created by spacing the second spacers apart from
10 one another; and

a second substrate positioned opposite the first substrate including at least one corresponding substantial region.

18. The liquid crystal display substrate as recited in claim 17, wherein the first
15 sealant and the second sealant are positioned between the first substrate and the second substrate to bind the first substrate and the second substrate and create a gap therebetween.

19. The liquid crystal display substrate as recited in claim 18, wherein the gap
20 includes liquid crystal.

20. The liquid crystal display substrate as recited in claim 17, wherein the at least one substantial region of the first substrate and the at least one corresponding

substantial region of the second substrate are combined to define an area including a liquid crystal display panel.

21. The liquid crystal display substrate as recited in claim 17, wherein a plurality of color filters are formed on the at least one substantial region of the first substrate.

22. The liquid crystal display substrate as recited in claim 17, wherein a plurality of thin-film transistors are formed on the at least one corresponding substantial region of the second substrate.

23. The liquid crystal display substrate as recited in claim 17, wherein the uniform distance is greater than a width of the second sealant.

24. The liquid crystal display substrate as recited in claim 17, wherein each of the plurality of second spacers has a uniform size.

25. The liquid crystal display substrate as recited in claim 17, wherein the second sealant is positioned substantially parallel to the first sealant.

26. A method for forming a liquid crystal display substrate, comprising:
forming a plurality of first spacers and a first sealant in at least one substantial region on a first substrate;

forming a plurality of second spacers and a second sealant in a dummy region on the first substrate adjacent the at least one substantial region, wherein each of the plurality of second spacers are spaced apart from one another at a uniform distance; and

5 positioning the second sealant in at least one open area created by spacing the second spacers apart from one another.

27. The method as recited in claim 26, wherein the uniform distance is greater than a width of the second sealant.

10 28. The method as recited in claim 26, wherein the uniform distance ranges from about 1.5 mm to about 2.5 mm.

15 29. The liquid crystal display substrate as recited in claim 26, wherein each of the plurality of second spacers has a uniform size.

30. The method as recited in claim 29, wherein each of the plurality of second spacers includes a cubic shape with a side length in the range of about 50 μm to about 150 μm .

20 31. The method as recited in claim 26, wherein each of the plurality of second spacers includes one of a cubic shape, a cylindrical shape and a prism shape.

32. The method as recited in claim 26, further comprising positioning the second sealant substantially parallel to the first sealant.

33. The method as recited in claim 26, further comprising dropping liquid crystal in the at least one substantial region.

34. The method as recited in claim 26, further comprising positioning a second substrate opposite the first substrate.

35. The method as recited in claim 34, further comprising injecting liquid crystal between the first substrate and the second substrate.

36. The method as recited in claim 35, wherein the liquid crystal is injected through a hole formed in the first sealant.

37. The method as recited in claim 34, further comprising positioning the first sealant and the second sealant between the first substrate and the second substrate to bind the first substrate and the second substrate and create a gap therebetween.

38. The method as recited in claim 34, further comprising:
forming a plurality of color filters on the first substrate; and
forming a plurality of thin-film transistors on the second substrate.

39. The method as recited in claim 26, further comprising positioning the first sealant on a seal line portion of the at least one substantial region.

40. The method as recited in claim 26, further comprising forming a cutting line between the at least one substantial region and the dummy region, wherein the cutting line defines the at least one substantial region.

41. The method as recited in claim 26, wherein the first sealant and the second sealant include one of an ultraviolet curable sealant and a thermally curable sealant.

42. The method as recited in claim 26, wherein the plurality of first spacers and the plurality of second spacers are formed from one of a photoresistive insulating layer and a light-insensitive insulating layer.

43. The method as recited in claim 26, further comprising positioning the second sealant in at least one other open area created by spacing the second spacers apart from one another at the uniform distance,

44. The method as recited in claim 26, further comprising curing the first sealant and the second sealant by exposing the first sealant and the second sealant to one of heat and ultraviolet light.

45. The method as recited in claim 26, wherein forming the plurality of first spacers includes:

forming a photoresistive insulating layer in the at least one substantial region;

5 exposing the photoresistive insulating layer to ultraviolet light using a photomask having a pattern corresponding to the plurality of first spacers to form a patterned insulating layer;

developing the patterned insulating layer to form the plurality of first spacers.

10 46. The method as recited in claim 26, wherein forming the plurality of first spacers includes:

forming a light-insensitive insulating layer in the at least one substantial region;

15 coating the light-insensitive insulating layer with a photoresist layer;

forming a photoresist pattern; and

etching the light-insensitive insulating layer using the photoresist pattern as an etching mask to form the plurality of first spacers.